



National Aeronautics
and Space Administration

MARCH 21, 1997
NRA 97-OSS-06

Research Announcement

Origins of Solar Systems Program

Proposals Due: JUNE 20, 1997

Origins of Solar Systems Program

NASA Research Announcement (NRA)
Soliciting Proposals for Basic Research
Proposals due: June 20, 1997

NRA 97-OSS-06
Issued: March 21, 1997

Office of Space Science
National Aeronautics and Space Administration
Washington, DC 20546-0001

Origins of Solar Systems Program (OSSP)

This NASA Research Announcement (NRA) solicits basic research proposals to conduct scientific investigations related to understanding the formation and early evolution of planetary systems and to provide the fundamental research and analysis necessary to detect and characterize other planetary systems. These investigations may involve analytical and numerical modeling, laboratory research, and observational studies in the following areas: star formation and the relationship to planetary system formation, solar nebula processes, accumulation and dynamical evolution, analysis of primitive materials, and the detection of other planetary systems. The investigations should directly support the goals related to understanding planetary system formation.

The Origins program realizes the existing potential for complementary interdisciplinary efforts to solve key scientific questions. To achieve this goal, proposals are encouraged which involve joint research efforts by investigators from different scientific communities. Interdisciplinary investigations may include, for example, studies of nebular chemistry and dynamics to understand the composition of primitive volatile-rich solar system bodies, or collaborations between observational astronomers and modelers to study the initial collapse of a protostellar cloud to form a nebula. Proposals for topical conferences, workshops, or other new initiatives related to the Origins of Solar System Program are also solicited through this NRA.

It is estimated that the funding level for this program for fiscal year (FY) 1998 will be approximately \$ 5 million and that this level of funding will support approximately 95 research investigations, including both full proposals and progress reports. Awards under this NRA are subject to the availability of program funds.

Participation in this program is open to all categories of organizations, both domestic and foreign: industry, educational institutions, other nonprofit organizations, NASA Centers, and other Government agencies. Proposals may be submitted at any time up to the submission date given below. These proposals will be evaluated by scientific peer review prior to the start of FY 1998. Announcements regarding selection for funding are expected to be made during October 1997. A listing of currently funded investigations is available through the program office.

Further details relevant to this program are included in the appendices to this Announcement. Appendix A provides technical and programmatic information in the general area in which proposals are sought, describes changes since last year, and provides amendatory guidance to Appendix B, applicable only to this NRA. Appendix B contains the general "Guidelines for Responding to NASA Research Announcements (NRA) for Solicited Basic Research Proposals." Appendix C contains model formats for use in preparation of proposals submitted to the Origins of Solar Systems Program.

The complete text of the NRA and appendices of this NRA may be downloaded directly from the Office of Space Science World Wide Web homepage after its release date of March 21, 1997 at URL <<http://www.hq.nasa.gov/office/oss/>>, select "Research Opportunities" from the menu. Paper copies of this NRA, Appendices, and required forms will be available from the NASA Headquarters Discipline Scientist shown below if the prospective proposer's institution lacks access to the World Wide Web.

The following items apply only to this Announcement:

Identifier: NRA 97-OSS-06

Submit Proposals to: Origins of Solar Systems Program
The Lunar and Planetary Institute (LPI)
3600 Bay Area Boulevard
Houston, TX 77058
(281) 486-2149

(Proposals solicited in response to this NRA and submitted directly to NASA Headquarters will be treated as correspondence)

Proposals Due: June 20, 1997

Copies Required: Full Proposals for New or Ongoing Research: 15
Progress Report Proposals: 5

(All Proposals must contain 4 additional copies of Appendix C, pages 1-4)

Selecting Official: Director
Research Program Management Division
Office of Space Science

Obtain Additional Information from: Joseph M. Boyce
Origins of Solar Systems Program
Research Program Management Division
Code SR
NASA Headquarters
Washington, DC 20546-0001 U.S.A.

Telephone: (202) 358-0302
FAX: (202) 358-3097
E-mail: joseph.boyce@hq.nasa.gov

Your interest and cooperation in participating in this opportunity are appreciated.

Edward J. Weiler
Science Program Director
Astronomical Search for Origins
and Planetary Systems
Office of Space Science

NASA Research Announcement
Origins of Solar Systems Program
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NASA Research Announcement

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Program Description:**I. Scope of the Origins of Solar Systems Program (OSSP)**

This NASA Research Announcement (NRA) solicits basic research proposals to conduct scientific investigations related to understanding the formation and early evolution of planetary systems and to provide the fundamental research and analysis necessary to detect and characterize other planetary systems. These investigations may involve analytical and numerical modeling, laboratory research and observational studies in the following areas: star formation and the relationship to planetary system formation, solar nebula processes, accumulation and dynamical evolution, analysis of primitive materials, and the detection of other planetary systems. The investigations supported through this NRA should directly support the goals related to understanding planetary system formation.

For example, key questions addressed by the research activities supported by this program may include: What was the initial mass, structure, motions, and temperature of the solar nebula, and the timescales over which planets formed? What are the conditions of star formation that lead to a single star surrounded by a protoplanetary disk? How was angular momentum transported in the nebula? What determined the masses of the giant planets? By what mechanism did the most primitive bodies in the solar system accumulate? What factors influence the growth of planetary embryos into planets? What processes were responsible for the patterns of chemical fractionation observed in the primitive meteorites and the volatile abundances in the planets? What is the frequency of the occurrence of planetary systems?

A unique goal of the Origins program is to realize the existing potential for complementary interdisciplinary efforts to solve key scientific questions. To achieve this goal, proposals are encouraged that involve joint research efforts by investigators from different scientific communities. Interdisciplinary investigations may include, for example, studies of nebular chemistry and dynamics to understand the composition of primitive volatile-rich solar system bodies, or collaborations between observational astronomers and modelers to study the initial collapse of a protostellar cloud to form a nebula.

Proposals for topical conferences, workshops, symposia, or other new initiatives related to the Origins program are also solicited through this NRA.

Ground-based Efforts towards Detection of Planetary Systems

The Origins program will support the ground-based observational efforts to detect (indirect and direct) and characterize other planetary systems, particularly those key observations summarized in the *Exploration of Neighboring Planetary Systems (ExNPS) Mission and Technology Roadmap* available at: <<http://techinfo.jpl.nasa.gov/WWW/ExNPS/homepage.html>>. NASA expects to capitalize on its investments in ground-based facilities that are expected to be on-line for science investigations by Fiscal Year (FY) 1998, but detection projects will not be limited to these primary research assets (Keck Observatory, Infrared Telescope Facility (IRTF) with its new tip-tilt secondary, and the Palomar Testbed Interferometer (PTI)). Investigations may include detection projects to continue ongoing search programs as well as to use innovative new techniques, new instruments, and/or telescopes to cover as much of the extrasolar planet search space as possible.

II. Program Management Information

Proposals may be submitted for periods of performance of 1 to 5 years, however, proposals are normally selected for a three year period. Proposals that are selected for funding will receive funding for one year at a time. Funding for subsequent fiscal years will be based on the availability of funds as well as the evaluation and selection of Progress Report proposals.

In case of a conflict between information outlined in this Appendix (A) and those in other appendices to the NRA, the provisions in Appendix A take precedence.

- A. The "Conformance to Guidance" and "Proposal Contents" sections of Appendix B are modified as follows:

The first four pages of each proposal constitute summary sheets that must follow the sample formats in Appendix C. Note that the "Transmittal Letter or Prefatory Material" sections still apply and that complete, detailed budgets and cost breakdowns must still appear in the main body of this proposal. At least one copy of the proposal must bear the signature of a responsible official or authorized representative of the organization, or any other person authorized to commit contractually or obligate the organization (unless the signature appears on the proposal itself). The remainder of the proposal immediately following the summary pages (with the exception of the abstract) should be prepared using the named categories in Section 7, Appendix B (as applicable) in the order listed. One set of pertinent reprints may be included with your proposal.

Also included in Appendix C are form ED 80-0004 "Certification Regarding Drug-Free Workplace Requirements Grantees Other Than Individuals," form ED GCS-008 (REV. 12/88), "Certification Regarding Debarment, Suspension, and Other Responsibility Matters Primary Covered Transactions," and the "Certification Regarding Lobbying" form required for all proposals with total budgets greater than \$100,000. One set of these completed forms must be included with the original signature version of all proposals.

Proposals should also include a list of current and pending research support from all other sources. Appendix C contains a format for this listing.

- B. The following statements are added to the "Project Description" Section 7 of Appendix B:

This section describes and justifies the proposed research. A brief introduction, background, and justification should be included. The description should provide a clear and concise statement of the research proposed, identifying and relating the key elements. Give attention to the nature and amount of experimental data to be collected; describe the methods or approaches to be used, as appropriate; discuss the advantages of the proposed approach over alternatives; and discuss the significance of the expected results. The content of the proposal should provide sufficient detail to enable a reviewer to make evaluative judgments with respect to all the "Evaluation Factors" identified in Appendix B, Paragraph 13, and modified in section F below.

A specific titled section describing the relevance of the proposed research to the Origins of Solar Systems Program objectives should be included in the body of the proposal. This section should address the relevance of the proposed research to increasing the scientific understanding of the origin of solar systems and the relevance of the proposed research to specific OSSP objectives identified in Section I, Appendix A of this NRA.

To facilitate the recycling of proposals after review, proposals should be submitted on plain, white paper only. This precludes the use of cardboard stock, plastic covers, colored paper, etc.

Co-Investigators and Collaborators:

The Project Description should clearly identify the roles and responsibilities of any Co-investigators or Collaborators for the proposed research. Generally, Co-investigators are expected to make a critical or significant contribution to the proposed research and may receive a portion of the funding if the proposal is selected. Evidence of commitment on behalf of the Co-investigator is required and may take the form of a letter from the Co-investigator or an authorized institutional official. Collaborators are generally not considered essential to the investigation and are not expected to receive funding under the proposal.

C. The "Length" section of Appendix B is modified as follows:

It is required that each full proposal be limited to ten single-spaced, typewritten (standard font) pages not including: cover pages, abstract, budget summary, figures, tables, and references. Note that each side of a sheet having text is considered a page. Font size shall be 10 point or greater.

D. Progress Report Proposals

Appendix B discusses "Renewal Proposals." This terminology has been replaced by "Progress Report Proposals" (also the same as supplement proposal). Brief Progress Report Proposals must be submitted in response to this NRA by its due date, for second and third year funding.

It is required that Progress Report Proposals include a report of progress made during the past year, a statement of planned work, and a budget for the coming year. These proposals are limited to 5 single-spaced, typewritten (standard font) pages not including: cover pages, abstract, budget summary, figures, tables, and references. A set of relevant reprints may be included with proposals.

E. Evaluation Techniques

The section on "Evaluation Techniques" in Appendix B is modified to contain the following additions: Peer review of proposals received in response to this NRA may involve individual scientists who currently receive support from NASA sponsored research programs. Also, regardless of the technique, the final decisions are always made by a designated NASA selection official incorporating considerations related to funds available and to the overall balance of the program in addition to the proposal's science and technical merit.

F. Evaluation Factors

The section on Evaluation Factors in Appendix B is modified to contain the following additions:

The evaluation of intrinsic merit will include as an additional factor an assessment of the impact on the scientific field of the proposer's recent work and the work proposed in response to the NRA.

The evaluation of a proposal's relevance will be evaluated with respect to the specific objectives of the Origins of Solar Systems Program rather than the relevance to overall NASA objectives.

The evaluation of a proposal's cost will be based on the realism, reasonableness, and cost effectiveness of the work outlined in the proposal.

III. Guidelines for Foreign Participation

Proposals from non-U.S. entities should not include a cost plan. Non-U.S. proposals and U.S. proposals which include foreign participation must be endorsed by the respective government agency or funding/sponsoring institution in that country from which the foreign participant is proposing. Such endorsement should indicate:

1. The proposal merits careful consideration by NASA.
2. If the proposal is selected, sufficient funds will be made available to undertake the activity as proposed.

Proposals, along with the requested number of copies and Letters of Endorsement, must be forwarded to NASA in time to arrive before the deadline established for this NRA. These documents should be sent to:

Origins of Solar Systems Program
The Lunar and Planetary Institute
3600 Bay Area Boulevard
Houston, TX 77058
USA
Tel. (281) 486-2149

One copy of the documents should be sent to:

Ms. Shiron D. Gaines
NRA 97-0SS-06
International Science and Aeronautics Division
Code IS
NASA Headquarters
Washington, DC 20546-0001
USA

All proposals must be typewritten in English. All non-U.S. proposals will undergo the same evaluation and selection process as those originating in the U.S. Non-U.S. proposals, and U.S. proposals which include non-U.S. participation, must follow all other guidelines and requirements described in this NRA. All proposals must be received before the established closing date; those received after the closing date may not be considered for funding in FY 1998. Sponsoring non-

U.S. agencies may, in exceptional situations, forward a proposal without endorsement to the above address, if review and endorsement are not possible before the announced closing date. In such cases, however, the NASA International Science and Aeronautics Division should be advised when a decision on endorsement can be expected. Successful and unsuccessful proposers will be contacted directly by the NASA Program Office coordinating the NRA. Copies of these letters will be sent to the sponsoring government agency. Should a non-U.S. proposal or a U.S. proposal with non-U.S. participation be selected, the NASA International Science and Aeronautics Division will arrange with the non-U.S. sponsoring agency for the proposed participation on a no exchange of funds basis, in which NASA and the non-U.S. sponsoring agency will each bear the cost of discharging its respective responsibilities. Depending on the nature and extent of the proposed cooperation, these arrangements may entail:

- (1) A letter of notification by NASA; and
- (2) An exchange of letters between NASA and the sponsoring Government agency, or
- (3) A formal agency-to-agency Memorandum of Understanding (MOU)

IV. EDUCATION AND PUBLIC OUTREACH

“Partners in Education: A Strategy for Integrating Education and Public Outreach Into NASA’s Space Science Programs” describes the Office of Space Science’s approach for making education at all levels and the enhancement of the public understanding of science integral parts of space science research activities. The follow-on implementation plan, “Implementing the Office of Space Science (OSS) Education/Public Outreach Strategy,” produced by the Education/Public Outreach Task Force of the Space Science Advisory Committee (SSAC) was published October 15, 1996. Copies of the OSS educational outreach strategy and the implementation plan may be obtained from Dr. Jeffrey D. Rosendhal, Office of Space Science, Code S, NASA Headquarters, Washington, DC 20546, E-mail: <jeffrey.rosendhal@hq.nasa.gov> or on the OSS World Wide Web Homepage at URL: <<http://www.hq.nasa.gov/office/oss/>>, select “Publications” from the menu.

Education/public outreach are now expected to be part of each flight program and research discipline. This policy is being implemented through a mixture of mission/project-specific outreach activities, plus education/public outreach activities conducted by individual researchers. NASA strongly encourages researchers to actively engage in education/public outreach and proposers are encouraged to include education/public outreach in their proposals.

Scientific excellence of proposed investigations will continue to be the primary selection criterion. Proposals will not be selected solely or primarily on the strength of their education/public outreach component, although the quality of a proposed education/public outreach effort could be used as an additional factor in selecting among equal and scientifically excellent proposals. Evaluation criteria for the education component will include:

- The educational effectiveness and realism of program concept.
 - The leverage of existing resources and the prospect for the program to have a multiplier effect.
 - The capability of the proposer to carry out proposed program.
 - The consistency with National educational reform efforts
- Realism and adequacy of budget.

Attention is also called to the program entitled Initiative to Develop Education through Astronomy (IDEA) that is administered on behalf of OSS by the Space Telescope Institute. This Program provides small grants (typically \$6K but range up to \$20K) to enhance participation of space scientists in precollege or public outreach activities. For more information contact Dr. Anne Kinney, Project Scientist for Education, Space Telescope Institute, 3700 San Martin Drive, Baltimore, MD 21218.

GUIDELINES FOR RESPONDING TO
NASA RESEARCH ANNOUNCEMENTS (NRA)
FOR SOLICITED BASIC RESEARCH PROPOSALS

JUNE 1995

OFFICE OF PROCUREMENT
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
WASHINGTON, DC 20546

INSTRUCTIONS FOR RESPONDING TO NASA RESEARCH ANNOUNCEMENTS (JUNE 1995)

1. Foreword

a. These instructions apply to "NASA Research Announcements." The "NASA Research Announcement (NRA)" permits competitive selection of research projects in accordance with statute while preserving the traditional concepts and understandings associated with NASA sponsorship of research.

b. These instructions are Appendix I to 1870.203 of the NASA Federal Acquisition Regulation Supplement.

2. Policy

a. Proposals received in response to an NRA will be used only for evaluation purposes. NASA does not allow a proposal, the contents of which are not available without restriction from another source, or any unique ideas submitted in response to an NRA to be used as the basis of a solicitation or in negotiation with other organizations, nor is a pre-award synopsis published for individual proposals.

b. A solicited proposal that results in a NASA award becomes part of the record of that transaction and may be available to the public on specific request; however, information or material that NASA and the awardee mutually agree to be of a privileged nature will be held in confidence to the extent permitted by law, including the Freedom of Information Act.

3. Purpose

These instructions supplement documents identified as "NASA Research Announcements." The NRAs contain programmatic information and certain requirements which apply only to proposals prepared in response to that particular announcement. These instructions contain the general proposal preparation information which applies to responses to all NRAs.

4. Relationship to Award

a. A contract, grant, cooperative agreement, or other agreement may be used to accomplish an effort funded in response to an NRA. NASA will determine the appropriate instrument.

b. Grants are generally used to fund basic research in educational and nonprofit institutions, while research in other private sector organizations is accomplished under contract. Contracts resulting from NRAs are subject to the Federal Acquisition Regulation and the NASA FAR Supplement (NHB 5100.4). Any resultant grants or cooperative agreements will be awarded and administered in accordance with the NASA Grant and Cooperative Agreement Handbook (NHB 5800.1).

5. Conformance to Guidance

a. NASA does not have mandatory forms or formats for responses to NRAs; however, it is requested that proposals conform to the guidelines in these instructions. NASA may accept proposals without discussion; hence, proposals should initially be as complete as possible and be submitted on the proposers' most favorable terms.

b. To be considered responsive, a submission must, at a minimum, present a specific project within the areas delineated by the NRA; contain sufficient technical and cost information to permit a meaningful evaluation; be signed by an official authorized to legally bind the submitting organization; not merely offer to perform standard services or to just provide computer facilities or services; and not significantly duplicate a more specific current or pending NASA solicitation.

6. NRA-Specific Items

Several proposal submission items appear in the NRA itself: the unique NRA identifier; when to submit proposals; where to send proposals; number of copies required; and sources for more information. Items included in these instructions may be supplemented by the NRA.

7. Proposal Contents

a. The following information is needed to permit consideration in an objective manner. NRAs will generally specify topics for which additional information or greater detail is desirable. Each proposal copy shall contain all submitted material, including a copy of the transmittal letter if it contains substantive information.

b. Transmittal Letter or Prefatory Material.

(1) The legal name and address of the organization and specific division or campus identification if part of a larger organization;

(2) A brief, scientifically valid project title intelligible to a scientifically literate reader and suitable for use in the public press;

(3) Type of organization: e.g., profit, nonprofit, educational, small business, minority, women-owned, etc.;

(4) Name and telephone number of the principal investigator and business personnel who may be contacted during evaluation or negotiation;

(5) Identification of other organizations that are currently evaluating a proposal for the same efforts;

(6) Identification of the NRA, by number and title, to which the proposal is responding;

(7) Dollar amount requested, desired starting date, and duration of project;

(8) Date of submission; and

(9) Signature of a responsible official or authorized representative of the organization, or any other person authorized to legally bind the organization (unless the signature appears on the proposal itself).

c. **Restriction on Use and Disclosure of Proposal Information.** Information contained in proposals is used for evaluation purposes only. Offerors or quoters should, in order to maximize protection of trade secrets or other information that is confidential or privileged, place the following notice on the title page of the proposal and specify the information subject to the notice by inserting appropriate identification, such as page numbers, in the notice. In any event, information contained in proposals will be protected to the extent permitted by law, but NASA assumes no liability for use and disclosure of information not made subject to the notice.

Notice

Restriction on Use and Disclosure of Proposal Information. The information (data) contained in [insert page numbers or other identification] of this proposal constitutes a trade secret and/or information that is commercial or financial and confidential or privileged. It is furnished to the Government in confidence with the understanding that it will not, without permission of the offeror, be used or disclosed other than for evaluation purposes; provided, however, that in the event a contract (or other agreement) is awarded on the basis of this proposal the Government shall have the right to use and disclose this information (data) to the extent provided in the contract (or other agreement). This restriction does not limit the Government's right to use or disclose this information (data) if obtained from another source without restriction.

d. **Abstract.** Include a concise (200-300 word if not otherwise specified in the NRA) abstract describing the objective and the method of approach.

e. **Project Description.** (1) The main body of the proposal shall be a detailed statement of the work

to be undertaken and should include objectives and expected significance; relation to the present state of knowledge; and relation to previous work done on the project and to related work in progress elsewhere. The statement should outline the plan of work, including the broad design of experiments to be undertaken and a description of experimental methods and procedures. The project description should address the evaluation factors in these instructions and any specific factors in the NRA. Any substantial collaboration with individuals not referred to in the budget or use of consultants should be described. Subcontracting significant portions of a research project is discouraged.

(2) When it is expected that the effort will require more than one year, the proposal should cover the complete project to the extent that it can be reasonably anticipated. Principal emphasis should be on the first year of work, and the description should distinguish clearly between the first year's work and work planned for subsequent years.

f. **Management Approach.** For large or complex efforts involving interactions among numerous individuals or other organizations, plans for distribution of responsibilities and arrangements for ensuring a coordinated effort should be described. Intensive working relations with NASA field centers that are not logical inclusions elsewhere in the proposal should be described.

g. **Personnel.** The principal investigator is responsible for supervision of the work and participates in the conduct of the research regardless of whether or not compensated under the award. A short biographical sketch of the principal investigator, a list of principal publications and any exceptional qualifications should be included. Omit social security number and other personal items which do not merit consideration in evaluation of the proposal. Give similar biographical information on other senior professional personnel who will be directly associated with the project. Give the names and titles of any other scientists and technical personnel associated substantially with the project in an advisory capacity. Universities should list the approximate number of students or other assistants, together with information as to their level of academic attainment. Any special industry-university cooperative arrangements should be described.

h. **Facilities and Equipment.** (1) Describe available facilities and major items of equipment especially adapted or suited to the proposed project, and any additional major equipment that will be required. Identify any Government-owned facilities, industrial plant equipment, or special tooling that are proposed for use.

(2) Before requesting a major item of capital equipment, the proposer should determine if sharing or loan of equipment already within the organization

is a feasible alternative. Where such arrangements cannot be made, the proposal should so state. The need for items that typically can be used for research and non-research purposes should be explained.

i. **Proposed Costs.** (1) Proposals should contain cost and technical parts in one volume: do not use separate "confidential" salary pages. As applicable, include separate cost estimates for salaries and wages; fringe benefits; equipment; expendable materials and supplies; services; domestic and foreign travel; ADP expenses; publication or page charges; consultants; subcontracts; other miscellaneous identifiable direct costs; and indirect costs. List salaries and wages in appropriate organizational categories (e.g., principal investigator, other scientific and engineering professionals, graduate students, research assistants, and technicians and other non-professional personnel). Estimate all manpower data in terms of man-months or fractions of full-time.

(2) Explanatory notes should accompany the cost proposal to provide identification and estimated cost of major capital equipment items to be acquired; purpose and estimated number and lengths of trips planned; basis for indirect cost computation (including date of most recent negotiation and cognizant agency); and clarification of other items in the cost proposal that are not self-evident. List estimated expenses as yearly requirements by major work phases. (Standard Form 1411 may be used).

(3) Allowable costs are governed by FAR Part 31 and the NASA FAR Supplement Part 1831 (and OMB Circulars A-21 for educational institutions and A-122 for nonprofit organizations).

j. **Security.** Proposals should not contain security classified material. If the research requires access to or may generate security classified information, the submitter will be required to comply with - Government security regulations.

k. **Current Support.** For other current projects being conducted by the principal investigator, provide title of project, sponsoring agency, and ending date.

l. **Special Matters.** (1) Include any required statements of environmental impact of the research, human subject or animal care provisions, conflict of interest, or on such other topics as may be required by the nature of the effort and current statutes, executive orders, or other current Government-wide guidelines.

(2) Proposers should include a brief description of the organization, its facilities, and previous work experience in the field of the proposal. Identify the cognizant Government audit agency, inspection agency, and administrative contracting officer, when applicable.

8. Renewal Proposals

a. Renewal proposals for existing awards will be considered in the same manner as proposals for new endeavors. A renewal proposal should not repeat all of the information that was in the original proposal. The renewal proposal should refer to its predecessor, update the parts that are no longer current, and indicate what elements of the research are expected to be covered during the period for which support is desired. A description of any significant findings since the most recent progress report should be included. The renewal proposal should treat, in reasonable detail, the plans for the next period, contain a cost estimate, and otherwise adhere to these instructions.

b. NASA may renew an effort either through amendment of an existing contract or by a new award.

9. Length

Unless otherwise specified in the NRA, effort should be made to keep proposals as brief as possible, concentrating on substantive material. Few proposals need exceed 15-20 pages. Necessary detailed information, such as reprints, should be included as attachments. A complete set of attachments is necessary for each copy of the proposal. As proposals are not returned, avoid use of "one-of-a-kind" attachments: their availability may be mentioned in the proposal.

10. Joint Proposals

a. Where multiple organizations are involved, the proposal may be submitted by only one of them. It should clearly describe the role to be played by the other organizations and indicate the legal and managerial arrangements contemplated. In other instances, simultaneous submission of related proposals from each organization might be appropriate, in which case parallel awards would be made.

b. Where a project of a cooperative nature with NASA is contemplated, describe the contributions expected from any participating NASA investigator and agency facilities or equipment which may be required. The proposal must be confined only to that which the proposing organization can commit itself. "Joint" proposals which specify the internal arrangements NASA will actually make are not acceptable as a means of establishing an agency commitment.

11. Late Proposals

A proposal or modification received after the date or dates specified in an NRA may be considered if the

selecting official deems it to offer NASA a significant technical advantage or cost reduction.

12. Withdrawal

Proposals may be withdrawn by the proposer at any time. Offerors are requested to notify NASA if the proposal is funded by another organization or of other changed circumstances which dictate termination of evaluation.

13. Evaluation Factors

a. Unless otherwise specified in the NRA, the principal elements (of approximately equal weight) considered in evaluating a proposal are its relevance to NASA's objectives, intrinsic merit, and cost.

b. Evaluation of a proposal's relevance to NASA's objectives includes the consideration of the potential contribution of the effort to NASA's mission.

c. Evaluation of its intrinsic merit includes the consideration of the following factors, none of which is more important than any other:

(1) Overall scientific or technical merit of the proposal or unique and innovative methods, approaches, or concepts demonstrated by the proposal.

(2) Offeror's capabilities, related experience, facilities, techniques, or unique combinations of these which are integral factors for achieving the proposal objectives.

(3) The qualifications, capabilities, and experience of the proposed principal investigator, team leader, or key personnel critical in achieving the proposal objectives.

(4) Overall standing among similar proposals and/or evaluation against the state-of-the-art.

d. Evaluation of the cost of a proposed effort includes the realism and reasonableness of the proposed cost and available funds.

14. Evaluation Techniques

Selection decisions will be made following peer and/or scientific review of the proposals. Several evaluation techniques are regularly used within NASA. In all cases proposals are subject to scientific review by discipline specialists in the area of the proposal. Some proposals are reviewed entirely in-house, others are evaluated by a combination of in-house and selected external reviewers, while yet others are subject to the full external peer review technique (with due regard for conflict-of-interest and protection of proposal information), such as by mail or through assembled panels. The final decisions are made by a NASA selecting official. A proposal which is scientifically and programmatically meritorious, but not selected for award during its

initial review, may be included in subsequent reviews unless the proposer requests otherwise.

15. Selection for Award

a. When a proposal is not selected for award, and the proposer has indicated that the proposal is not to be held for subsequent reviews, the proposer will be notified. NASA will explain generally why the proposal was not selected. Proposers desiring additional information may contact the selecting official who will arrange a debriefing.

b. When a proposal is selected for award, negotiation and award will be handled by the procurement office in the funding installation. The proposal is used as the basis for negotiation. The contracting officer may request certain business data and may forward a model contract and other information which will be of use during the contract negotiation.

16. Cancellation of NRA

NASA reserves the right to make no awards under this NRA and to cancel this NRA. NASA assumes no liability for cancelling the NRA or for anyone's failure to receive actual notice of cancellation. Cancellation may be followed by issuance and synopsis of a revised NRA, since amendment of an NRA is normally not permitted.

Required and Recommended Forms

- o Origins of Solar Systems Program Cover Pages
- o Proposal Abstract
- o Budget Summary
- o Current and Pending Support
- o Certification Regarding Debarment, Suspension, and Other Responsibility Matters
- o Certification Regarding Drug-Free Workplace Requirements
- o Certification Regarding Lobbying

ORIGINS OF SOLAR SYSTEMS PROGRAM

Log No. _____

Date Received: _____

Do not write in the above area.

NRA #: _____

Grant/Contract/RTOP #: _____
(For Progress Proposals Only)

Date Submitted: _____

Please check all that apply to this NRA:

☐ Theory ☐ Observations ☐ Cosmochemistry ☐ Formation & Detection

☐ New Proposal: ----- Progress Proposal

Research Area: _____
(Indicate main research area; i.e., inner planets, outer planets, comets, solar nebula, etc.)

Proposal Title: _____

Principal Investigator (Name): _____

Institution: _____

Address: _____

City/State/Zip Code: _____

Telephone: (____) _____ Fax: (____) _____

Internet Address: _____

Signature Date
Institutional Authorization Official:

Signature Date

Title

Address: _____

City/State/Zip Code: _____

Telephone: (____) _____ Fax: (____) NRA #: _____

Institution Contact or Business Representative:

Telephone: (____) _____ Fax: (____) _____

Please list all names and institutions below (use separate sheet if necessary)

Co-Investigators:

Institutions:

:

Proposed Duration of Project: _____ months

Desired Start Date: _____ **End Date:** _____

Budget Request:

<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>
\$ _____	\$ _____	\$ _____
	<u>Year 4</u>	<u>Year 5</u>
	\$ _____	\$ _____

Total Funding Requested: \$ _

PROPOSAL ABSTRACT

PRINCIPAL INVESTIGATOR:

(Name, Address, Telephone Number)

E-mail Address

CO-INVESTIGATORS:

(Name Only)

PROPOSAL TITLE:

ABSTRACT: (Type single-spaced below line. Lettered paragraphs (a) through (d) should include: a. brief summary of the overall objectives and justification of the work; b. brief statement of the accomplishments of the prior year, or "new proposal;" c. brief listing of what will be done this year, as well as how and why; and d. one or two recent publications by proposers relevant to proposed work.)

BUDGET SUMMARY

From: _____ to _____ (Date)

TITLE OF INVESTIGATION:PRINCIPAL INVESTIGATOR / INSTITUTION:

		(NASA Use Only)	
	A	B	C
1. Direct Labor (salaries, wages, and fringe benefits)	_____	_____	_____
2. Other Direct Costs:			
a. Subcontracts	_____	_____	_____
b. Consultants	_____	_____	_____
c. Equipment	_____	_____	_____
d. Supplies	_____	_____	_____
e. Travel	_____	_____	_____
f. Other	_____	_____	_____
3. Indirect Costs	_____	_____	_____
4. Other Applicable Costs	_____	_____	_____
5. Subtotal - Estimated Costs	_____	_____	_____
6. Less Proposed Cost Sharing (if any)	_____	_____	_____
7. Carryover Funds (if any)			
a. Anticipated amount _____	_____	_____	_____
b. Amount used to reduce budget	_____	_____	_____
8. Total Estimated Costs	_____	_____	XXXXXXX
Approved Budget	XXXXXXX	XXXXXXX	_____

Instructions

1. Provide a separate budget form for each year of proposed research and a summary form.
2. Grantee estimated costs should be entered in the first column. Columns B and C are for NASA use only. Column three represents the approved grant budget.
3. Provide in attachments to the budget summary the detailed computations of estimates in each cost category, along with any narrative explanation required to fully explain proposed costs.

additional Instructions on Next Page

Specific Costs

1. Direct Labor (salaries, wages, and fringe benefits). Enclosures should list number and titles of personnel, amount of time devoted to the grant, and rates of pay.
2. Other Direct Costs:
 - a. Subcontracts - Enclosures should describe the work to be subcontracted, estimated amount, recipient (if known), and the reason for subcontracting this effort.
 - b. Consultants - Identify consultants to be used, why they are necessary, time to be spent on the project, and rates of pay.
 - c. Equipment - List separately and explain the need for items of equipment exceeding \$1,000. Describe the basis for the estimated cost.
 - d. Supplies - Provide general categories of needed supplies, the methods of acquisition, estimated cost, and the basis for the estimate.
 - e. Travel - List the proposed trips individually, describe their purpose in relation to the grant, provide dates and destinations where known, and explain how the cost for each was derived.
 - f. Other - Enter the total of any other direct costs not covered by 2.a. through 2.e. Enclose an itemized list explaining the need for each item and the basis for the estimate.
3. Indirect Costs - Identify indirect cost rate(s) and base(s) as approved by the cognizant Federal agency, including the effective period of the rate. If unapproved rates are used, explain why and include a computational basis for the indirect expense pool and corresponding allocation base for each rate.
4. Other Applicable Costs - Enter the total of any other applicable costs not covered by 1. through 3. Enclose an itemized list explaining the need for each item and the basis for the estimate.
5. Subtotal - Estimated Costs - Enter the sum of items 1., 2.a., through 2.f., 3., and 4.
6. Less Proposed Cost Sharing (if any) - Enter the amount proposed, if any. If cost sharing is based on specific cost items, identify each item and amount in enclosures.
7. Less Carryover Funds (if any) - Enter the dollar amount of any funds that are expected to be available for carryover from the prior budget period.
8. Total Estimated Costs - Enter the total after subtracting items 6. and 7. from item 5.

LIST CURRENT AND PENDING RESEARCH SUPPORT FROM ALL OTHER SOURCES

This list should include all current research support from all other sources. It must include the proposed project and all other research requiring a part or portion of time of the principal investigator and other senior personnel. The number of person-months must be stated regardless of the source of the support. Please provide this information in the following form:

I. Name of Principal Investigator

A. *Current Support*

1. Source of Support
2. Project Title and Short Abstract
3. Award Amount
4. Period Covered by Award
5. Person-Months
6. Location where research is/will be performed

B. *Pending Proposals (including renewal applications)*

1. Source of Support
2. Project Title and Short Abstract
3. Award Amount
4. Period Covered by Award
5. Person-Months
6. Location where research is/will be performed

II. Names of Co-Investigators

A. *Current Support*

1. Source of Support
2. Project Title and Short Abstract
3. Award Amount
4. Period Covered by Award
5. Person-Months
6. Location where research is/will be performed

B. *Pending Proposals (including renewal applications)*

1. Source of Support
2. Project Title and Short Abstract
3. Award Amount
4. Period Covered by Award
5. Person-Months
6. Location where research is/will be performed

III. Other agencies to which this proposal, or parts thereof, has been submitted.

Certification Regarding
Debarment, Suspension, and Other Responsibility Matters
Primary Covered Transactions

This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, 34 CFR Part 85, Section 85.510, Participant's responsibilities. The regulations were published as Part VII of the May 26, 1988 Federal Register (pages 19160-19211). Copies of the regulation may be obtained by contracting the U.S. Department of Education, Grants and Contracts Service, 400 Maryland Avenue, S.W. (Room 3633 GSA Regional Office Building No. 3), Washington, DC. 20202-4725, telephone (202) 732-2505.

- (1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:
- (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
 - (b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
 - (c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and
 - (d) Have not within three-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.
- (2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

Organization Name

PR/Award Number or Project Name

Name and Title of Authorized Representative

Signature

Date

Certification Regarding Drug-Free Workplace Requirements Grantees Other Than Individuals

This certification is required by the regulations implementing the Drug-Free Workplace Act of 1988, 34 CFR Part 85, Subpart F. The regulations, published in the January 31, 1989 Federal Register, require certification by grantees, prior to award, that they will maintain a drug-free workplace. The certification set out below is a material representation of fact upon which reliance will be placed when the agency determines to award the grant. False certification or violation of the certification shall be grounds for suspension of payments, suspension or termination of grants, or governmentwide suspension or debarment (see 34 CFR Part 85, Sections 85.615 and 85.620).

This grantee certifies that it will provide a drug-free workplace by:

- (a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;
- (b) Establishing a drug-free awareness program to inform employees about -
 - (1) The dangers of drug abuse in the workplace;
 - (2) The grantee's policy of maintaining a drug-free workplace;
 - (3) Any available drug counseling, rehabilitation, and employee assistance programs, and
 - (4) The penalties that may be imposed upon employees for drug abuse violations in the workplace;
- (c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);
- (d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will -
 - (1) Abide by the terms of the statement; and
 - (2) Notify the employer of any criminal drug statute conviction for a violation occurring in the workplace no later than five days after such conviction;
- (e) Notifying the agency within ten days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction;
- (f) Taking one of the following actions, within 30 days of receiving notice under subparagraph (d)(2) , with respect to any employee who is so convicted -
 - (1) Taking appropriate personnel action against such an employee, up to and including termination; or
 - (2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;
- (g) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraph (a), (b), (c), (e), and (f).

Organization Name

PR/Award Number or Project Name

Name and Title of Authorized Representative

Signature

Date

ED 80-0004

CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans, and Cooperative Agreements.

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000, and not more than \$100,000 for each such failure.

Signature and Date

Name and Title of Authorized Representative

Organization Name

Special Notice for Commerce Business Daily (CBD)

Basic Research Opportunity. The National Aeronautics and Space Administration (NASA) Office of Space Science (OSS) is releasing a NASA Research Announcement (NRA 97-OSS-06) that solicits basic and applied research proposals for the Origins of Solar Systems Program (OSSP) to conduct scientific investigations related to understanding the formation and early evolution of planetary systems and to provide the fundamental research and analysis necessary to detect and characterize other planetary systems. Participation in OSSP is open to all categories of organization, domestic or foreign, including educational institutions, for profit, not-for-profit organizations, NASA Centers, and other Government agencies. Minority and disadvantaged institutions are particularly encouraged to apply to this NRA. This announcement will be available on the OSS Homepage on March 21, 1997, at URL: <<http://www.hq.nasa.gov/office/oss/>> , select "Research Opportunities." For those not having access to the internet a paper copy may be requested from Mr. Joseph M. Boyce, Research Program Management Division, Office of Space Science, Code SR NASA Headquarters, Washington, DC 20546-1000, (202) 358-0302, E-mail: joseph.boyce@hq.nasa.gov. Scientific inquiries should be made to Mr. Boyce at the same address as above. This announcement will be released on March 21, 1997, and proposals are due by June 20, 1997. This notice constitutes a NASA Research Announcement (NRA) as contemplated by FAR 6.102 (d) (2).